

REMARKS

Favorable reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

I. CLAIM STATUS & AMENDMENTS

Claims 24-29 are pending and rejected.

Claim 24 has been amended to emphasize in the body of the claim that claimed invention results in the prevention of recurrence of liver cancer for five years. Support for this amendment can be found in the preamble. Such amendment does not raise a new issue, because the "prevention of recurrence of liver cancer for five years" was previously recited in the preamble, considered by the Examiner at page 4, lines 1-2 of Office Action of December 8, 2003, and discussed by the Applicant at page 4, lines 4-5 of the response of August 13, 2003.

II. REJECTION UNDER 35 U.S.C. § 103

Claims 24-29 are rejected under 35 U.S.C. § 103(a), as allegedly obvious over Sekine et al., Human Cell, Vol. 7, No. 3, pp. 121-124 (1994) in view of Chakravarty et al., Current Science, Vol. 73, No. 2, pp. 201-203 (1997). See Office Action, pages 2-4.

Applicants respectfully traverse this rejection as applied to the amended claims for the following reasons.

To establish obviousness, three criteria must be met. First, the prior art references must teach or suggest each and every element of the claimed invention. Second, there must be some suggestion or motivation in the references to either modify or combine the reference teachings to arrive at the claimed invention. Third, the prior art must provide a reasonable expectation of success.

The cited references fail to teach and/or suggest each and every element of the claimed invention, namely the prevention of recurrence of liver cancer for five years.

The instant invention relates to a curative method for the prevention of the recurrence of liver cancer. Specifically, the claims call for administering activated lymphocytes in combination with a surgical procedure to prevent the recurrence of liver cancer for at least five years.

However, as acknowledged at page 4, lines 1-2 of the Office Action, Sekine does not teach prevention of recurrence of liver cancer for at least five years. Similarly, Chakravarty also fails to teach prevention of recurrence of liver cancer for five years. Chakravarty fails to discuss the efficacy of prevention of recurrence. Accordingly, neither reference teaches nor suggests the claimed invention for the prevention of recurrence of liver cancer for five years.

Moreover, the cited references also lack a reasonable expectation for the successful prevention of recurrence of liver cancer for five years.

As discussed at page 14, line 10 of the Specification, one of the biggest fears for a cancer patient is the recurrence of cancer following treatment. Along these lines, it is well established that hepatocellular carcinoma often recurs within a short period of time and at a high rate, even after radical surgical operations. In fact, as discussed at page 5, lines 5-10 of Sekine, the recurrence rate for liver cancer is 33% in the first year, 57% in the second year, 70% in the third year, and no effective preventative method is known. Also, as discussed at page 2, lines 4-7 of the Specification, activated lymphocytes have been used alone under conventional techniques with poor efficacy for preventing the recurrence of cancer. The efficacy of activated lymphocytes under conventional techniques alone is a short period of time, approximately, two years. Based on such knowledge, those in the prior art would not have expected the successful prevention of recurrence for five years.

Chakravarty fails to rectify this deficiency, because Chakravarty fails to disclose and/or suggest the prevention of recurrence of liver cancer for any length of time.

Sekine also fails to rectify this deficiency. Instead, Sekine merely describes the protocol and initial data from a clinical trial. The results of Sekine's two year study fail to suggest the prevention of the recurrence of liver cancer for five years.

Assuming arguendo that the method of Sekine is similar to that in the instant invention, there was no reasonable expectation of success at the time of the publication of Sekine for the prevention of recurrence of liver cancer for five years. Upon reading the cited references and being aware of the general knowledge of intractable nature of liver cancer, one of skill in the art at the time of the publication date of the cited references would not have a reasonable expectation of success for the prevention of recurrence of liver cancer for five years by administering activated lymphocytes in combination with a surgical procedure as claimed. The prevention of recurrence for two years is not suggestive for five years.

In fact, notwithstanding that the claimed invention is not obvious over the cited references, the data of the instant invention amounts to surprising and unexpected results over the teachings of the cited references. As demonstrated at page 13, lines 1-7 of the Specification, the efficacy of the instant invention for the prevention of cancer is at least five years. Five years far exceeds the two years disclosed in Sekine. Prevention of recurrence for five years is unexpected in view of the intractable nature of liver cancer as discussed above.

Therefore, in view of the above, the rejection of claims 24-29 under 35 U.S.C. § 103(a) is untenable and should be withdrawn.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is now in condition for allowance and early notice to that effect is hereby requested.

If it is determined that the application is not in condition for allowance, the Examiner is invited to telephone the undersigned attorney at the number below if he has any suggestions to expedite allowance of the present application.

Respectfully submitted,

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